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NO. 129 P. 10

FEB 23 2007

REMARKS

Claims 1-37 are pending. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chong (U.S. 6,070,251) in view of Lubbers (U.S. 6,931,487). Amendments have been made to claims 1 and 27 to correct informalities.

Claims 1 and 27 have been amended to recite "wherein a high availability characteristic table is referenced using a message type to determine persistent, logged, and mirrored characteristics associated with the message." Claims 1 and 27 have also been amended to recite "writing the message to a pending transaction buffer when high availability characteristics indicate that the message should be logged, and writing the message to a persistent table when high availability characteristics indicate that the message is persistent." This amendment is believed supported in Figure 4 and associated description. More specifically, "To provide high availability services in one example, MTS 331 identifies high availability characteristics of each message. Figure 4 is a diagrammatic representation of high availability characteristics that a message 401 may have. A message may be persistent 403, logged 405, and mirrored 407. Any characteristic used to provide high availability services is referred to herein as a high availability characteristic. A persistent message is typically a message that causes a change in state ... A log message is typically a message that results in an update of a persistent table ... A message may also have a high availability characteristics of mirroring." (page 12, line 27 – page 13, line 31)

None of the references cited by the Examiner teach or suggest this recitation. Neither Chong nor Lubbers teaches or suggests this recitation. The cited art does not describe any high availability characteristics table, does not teach or suggest referencing such a table using a message type, and does not provide the high availability characteristics or persistence, logging, and mirroring. The cited art instead seems to suggest that all messages are mirrored.

The cited reference Chong describes a conventional failover system having a primary controller and a secondary controller. Since both controllers have the same address, data is received by both controllers by a host. See Col. 3, Lines 29-30 & Lines 45-48. However, Chong does not appear to teach mirroring a message sent from a first application on an active supervisor to a second application of a standby supervisor "when high availability characteristics indicate that the message should be mirrored" and the Examiner acknowledges that Chong does not

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explicitly disclose determining high availability characteristics associated with a message. The Examiner cites Col. 2, Lines 56 through Col. 3, Line 67 for teaching synchronization of data between the primary and secondary controllers so that the secondary controller can take over if the primary controller fails. It is respectfully submitted that these cited passages appear to teach that synchronization of data is accomplished for all data being received by both controllers. Synchronization is also discussed in relation to another context, besides mirroring data, in that Chong also appears to describe synchronization between both controllers to prevent data overruns between the PSOC of the controllers. When each PSOC of each controller has available memory space, it notifies the other PSOC of the other controller. Supra Lines 50-67. This synchronization appears to not deal with mirroring of data sent by an application of the primary controller, but rather, merely notification of available memory by each controller to the other controller.

Chong does not appear to teach determining high availability characteristics associated with a message sent from a first application and then basing a mirroring operation on whether or not these characteristics indicate that the message should be mirrored, in the manner claimed. In sum, these cited passages appear to not teach mirroring a message sent from a first application on an active supervisor to a second application of a standby supervisor when high availability characteristics indicate that the message should be mirrored. In fact, Chong does not even teach or suggest determining high availability characteristics. In contrast, Chong teaches that all data is received by the primary and secondary controllers, rather than mirroring data based on whether or not high availability characteristics indicate mirroring. In light of the forgoing, it is submitted that claims 1 and 27 are patentable over Chong.

Lubbers similarly does not teach or suggest "determining high availability characteristics associated with a message" and does not teach or suggest mirroring when "when high availability characteristics indicate that the message should be mirrored" and in fact does not even relate to an active supervisor and a standby supervisor. Lubbers describes "a storage architecture that provides virtualized data storage." Col. 5, Lines 7-8. "Some LUNS 102 may represent striped, mirrored and/or parity-protected storage. Other LUNS 102 may represent storage capacity that is configured without striping, redundancy, or parity protection." Col. 6, Lines 44-47. However, having some LUNs that are mirrored and other LUNs that are not mirrored is not "determining high availability characteristics associated with a message." All

data included in a LUN is either mirrored or not. There is no mechanism for determining high availability characteristics associated with a message or mirroring when high availability characteristics indicate that the message should be mirrored. No description of any message is provided. Consequently, it is believed that a conventional message is used, and a conventional message does not have associated high availability characteristics. Transmission of a conventional message is also not based upon high availability characteristics.

Furthermore, Lubbers is not even talking about mirroring messages between an active supervisor and a standby supervisor so it is believed inappropriate to combine the references. Lubbers is merely describing data being written by an active supervisor to a first disk and data written by the same active supervisor to a second disk. Lubbers does not teach or suggest any messages between an active supervisor and a standby supervisor.

Consequently, Lubbers does not relate to messages between an active supervisor and a standby supervisor so it is inappropriate to combine the references. Furthermore, even if appropriately combined, neither Chong nor Lubbers either alone or in combination teach or suggest "determining high availability characteristics associated with a message." Furthermore, neither Chong nor Lubbers either alone or in combination teach or suggest

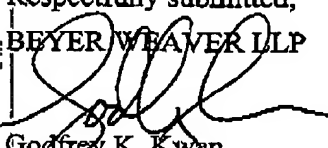
Claim 13 has been amended to recite "the first supervisor operable to send the second supervisor a sequence number to indicate that the second supervisor should expect the message, wherein the second supervisor performs a maintenance operation if the second supervisor does not receive the message." This amendment is believed supported in Figure 7 and associated description. More specifically, "to account for the fault period 741, the active supervisor at 713 sends advance notification to the standby supervisor 731 telling the standby supervisor to expect a message. In one embodiment, the active supervisor at 715 sends a sequence number to standby supervisor 731 telling the standby supervisor to expect a message. If the message at 735 is never received, the standby supervisor can then perform some maintenance operation. In one example, the standby supervisor could ask the external entity to reinitiate the sequence." (page 16, lines 6-13)

None of the references cited by the Examiner teach or suggest this recitation. Neither Chong nor Lubbers teaches or suggests sending "the second supervisor a sequence number to

indicate that the second supervisor should expect the message, wherein the second supervisor performs a maintenance operation if the second supervisor does not receive the message."

In view of the foregoing, Applicants believe all rejections have been overcome thereby placing all independent and dependent claims now pending in this application in condition for allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at the number provided below.

Respectfully submitted,
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